

REMARKS

The Advisory Action indicated that the Supplemental Amendment under 37 C.F.R. § 1.116 filed on October 18, 2006 was entered.

New claim 5 has been added. Support for this claim can be found, for example, on page 3, lines 16-22 of the specification.

Upon entry of the Amendment, claims 1-3 and 5 will pending in the application.

Applicants submit the following new arguments discussed below.

Claims 1-4 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mori et al., WO 03/014174, in view of Li Ming, Chinese Patent No. 1336390 ("Li Ming").

Applicants submit that the present invention produces a modified ethylene-vinylcyclohexane copolymer resin by melt-kneading a blend containing the following components (A) to (C) in a kneading apparatus:

- 100 parts by weight of the component (A);
- 0.1 to 20 parts by weight of the component (B); and
- 0.01 to 20 parts by weight of the component (C).

Mori discloses a melt-kneading method in paragraph [0045] as follows:

As a producing method of the modified olefin-based copolymer, for example, there are a method of adding and graft-polymerizing an alkenyl aromatic hydrocarbon and/or an unsaturated carboxylic acid or derivative thereof after melting the olefin-based copolymer, a method of adding and graft-polymerizing an alkenyl aromatic hydrocarbon and/or an unsaturated carboxylic acid or derivative thereof after dissolving the olefin-based copolymer with a solvent such as toluene or xylene, and the like.

However, Mori does not disclose a melt-kneading method so that one skilled in the art could modify the method disclosed in Mori and arrive at Applicants' claimed invention.

The method disclosed in Mori is a solution method and Example 1 in Mori at paragraph [0077] is translated as follows:

To a xylene solution containing 25 parts by weight of the copolymer (B-1), there were separately fed over 4 hours (i) a xylene solution containing 25 parts by weight of maleic anhydride, and (ii) a xylene solution containing 1.48 parts by weight of 2,5-dimethyl-2,5-di(tert-butylperoxy)hexane. The reaction mixture was further stirred for 2 hours.

In the above example, the copolymer (B-1), maleic anhydride and 2,5-dimethyl-2,5-di(tert-butylperoxy)hexane corresponds to Applicants' component (A), component (B), and component (C), respectively.

Applicants provide herewith a Table, Table A, comparing the present invention with the above-mentioned Example 1 in Mori (solution method).

Table A

	Present Invention	Example 1
Parts by weight		
Component (A)	100	100
Component (B)	0.1 to 20	100
Component (C)	0.01 to 20	5.92
Reaction time	0.1 - 30 minutes (see page 10, line 26)	6 hours

The following distinctions are clear from reviewing Table A, which compares Applicants' melt-kneading method with the solution method of Example 1 in Mori:

-- the amount of component (B) in the claimed invention (0.1 to 20 parts by weight) is much smaller than the amount of component (B) used in Example 1 in Mori (100 parts by weight)

-- the reaction time in present invention (0.1-30 minutes) is much shorter than the reaction time disclosed in Example 1 in Mori (6 hours)

In the present invention, the melt kneading method can produce a modified product by use of component (B) in a much smaller amount and by using a shorter reaction time as compared to the solution method disclosed in Mori.

Applicants submit that Li Ming does not make up for the deficiencies of Mori.

Li Ming discloses ethylene-octene resin, which is not the same as an ethylene-vinylcyclohexane resin, as recited in Applicants' claims.

Additionally, Li Ming discloses a reaction time of 5 to 15 minutes (in claim 1), which is different from Applicants' melt-kneading period of 0.5 to 5 minutes. The disclosure of a range is no more a disclosure of the end points of the range than it is of each of the intermediate points within that range and although the range disclosed in Li Ming touches the range claimed in the present invention, Li Ming does not describe the entire claimed range with sufficient specificity to anticipate or render obvious the claimed range. *See Atofina v. Great Lakes*, 441 F.3d 991 (Fed. Cir. 2006).

Further, as discussed in the specification, when the reaction time is outside the claimed range, the graft amount may be insufficient or component (A) may decompose (see the paragraph bridging pages 10-11 of the specification).

In view of the foregoing, Applicants submit that the present invention would not be obvious over Mori and Li Ming. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection.

Claims 1-4 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Oi et al., EP 1 197 501 (“Oi”) in view of Rodriguez et al., U.S. Patent No. 6,221,967 (“Rodriguez”).

Applicants traverse the rejection.

As the Examiner admits in the remarks in the Advisory Action dated November 1, 2006, it is clear that the teachings of Oi and Rodriguez in isolation do not suggest Applicants’ claimed invention.

Applicants are not arguing over the references in isolation. Applicants have pointed out the deficiencies in Oi and Rodriguez in an effort to establish that the combination of Oi and Rodriguez disclose or suggest all the elements of the claimed invention. In this regard, as previously pointed out, Oi does not disclose Applicants’ claimed modified ethylene-vinylcyclohexane copolymer resin, but instead Oi discloses only a non-modified copolymer, such as a copolymer of ethylene and a vinyl compound. Additionally, Oi does not disclose or suggest Applicants’ blend of components (A) to (C), particularly in the amounts recited in components (A) to (C).

Further, Rodriguez does not make up for the deficiencies of Oi. That is, Rodriguez does not disclose or suggest a modified ethylene-vinylcyclohexane copolymer resin or the claimed blend of components (A) to (C).

In view of the foregoing, Applicants submit that the present invention would not be obvious over Oi and Rodriguez. Reconsideration and withdrawal of the rejection are respectfully requested.

U.S. Appln. No.: 10/624,512
Amendment 37 C.F.R. § 1.114(c)

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

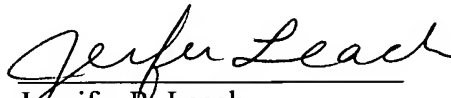
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Date: November 17, 2006